EXHIBIT

B – Part

IV

2.10 SPECIAL REQUIREMENTS

A. Handicapped Requirements

1. Locate the alarm button and emergency stop switch at 35 inches, and floor and control button not more than 48 inches.

2. Provide raised markings in the panel to the left of the floor and control buttons as shown on the architectural drawings. Letters and numbers shall be a minimum of 5/8 inch and raised .03 inch and shall be in contrasting color to the call buttons. Plates, if used, shall be stud mounted and recessed flush with the car station.

3. The centerline of the hall pushbutton station shall be 42" above the floor.

4. The hall lanterns or cab lantern shall sound once for the "up" direction and twice for the "down" direction.

5. Provide floor designations at each entrance on both sides of jamb at a height of 60" above the floor. Designations shall be 2" high, raised .03 inches and shall be custom designed by the Architect.

6. Provide an audible signal to tell passenger that the car is stopping or passing a floor served by the elevator.

B. Elevator Safety Requirements for Seismic Zone 2

1. Guarding of equipment, machine supports, guide rail systems, the design of counterweight car frame and platform, safeties and signaling devices shall meet the requirements of ASME A17.1 Part XXIV.

2.11 COMMUNICATION SYSTEM

A. Auto Dial Telephone

1. Provide an automatic dialing, hands free telephone in the car station. The system shall be in compliance with ADA requirements for visual and audible communications.
2. The telephone shall be turned on by pressing the emergency alarm or stop switch in the car panels. It shall automatically dial a programmed number to alert the security personnel that there is a problem in the elevator and identify visually which elevator is initiating the call.

3. Provide programmable time clock switch mechanism which shall allow the system to dial a second programmed number for after hours and weekends.

4. The system shall have a ring back feature to allow calls to be placed to the elevator. It shall answer the incoming call automatically and shut off after an adjustable programmed time.

5. Provide an audible and visual signal to indicate that a communication link has been established.

6. NiCad batteries shall insure operation under all conditions.

7. Install the instrument in the elevator and wiring within the hoistway, terminating the wiring in the elevator machine room. A suitable and identified junction box in the machine room shall be installed.

8. All connections from the junction box to the security room's main telephone system shall be done by others.

2.12 CAR ENCLOSURES

A. Include all labor, materials, equipment and services necessary to complete the elevator cab enclosures, including connection of lighting, communication and monitoring devices for proper elevator operation.

2.13 FULL PROTECTIVE MAINTENANCE SERVICE

A. Submit two alternate prices to extend the full maintenance service beyond the installation period for all the elevators included in the Specifications. Alternate No. 1 shall be submitted for the 1st year commencing after final acceptance of all units and Alternate No. 2 for the 2nd thru 5th years, thereafter, in accordance with the Warranty Services Agreement.

PART 3 - EXECUTION

3.01 INSPECTION

A. Study the Contract Documents with regard to the work as shown and required so as to insure its completeness.

B. Examine surface and conditions to which this work is to be attached or applied, and notify the Architect in writing, if conditions or surfaces are detrimental to the proper and expeditious installation of the work. Starting the work shall imply acceptance of the surfaces and conditions to perform the work as specified.

C. Verify, by measurements at the job site, dimensions affecting the work. Bring field dimensions which are at variance with those on the accepted shop drawings to the attention of the Architect. Obtain the decision regarding corrective measures before the start of fabrication of items affected.

D. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

3.02 INSTALLATION

A. Install the elevators, using skilled workmen in strict accordance with the final accepted shop drawings and other submittals.

B. Comply with the code, manufacturer's instructions and recommendations.

C. Coordinate work with the work of other trades for proper time and sequence to avoid construction delays and to insure right-of-way of system. Use lines and levels to ensure dimensional coordination of the work.

D. Accurately and rigidly secure supporting elements within the shaftways to the encountered construction within the tolerance established.

E. Erect guide rails plumb and parallel to a maximum of 1/8" (plus or minus 1/16").

F. Install rails so that joints do not interfere with brackets.

G. Set entrance plumb in hoistway and in alignment with guide rails prior to the erection of the front walls.

H. Arrange door tracks and sheaves so that no metal to metal contact exists.

I. Reinforce hoistway fascias to allow not more than 1/2 inch of reflection.

J. Pack openings around oil line with fire resistant, sound isolating glass or mineral wool.

K. Install elevator cab enclosure on platform plumb and align cab entrance with hoistway entrances.

L. Sound isolate cab enclosure from car structure. allow no direct rigid connections between enclosure and car structure and between platform and car structure.

M. Isolate cab fan from canopy to minimize vibration and noise.

N. Remove oil, dirt and impurities and give a factory coat of rust inhibitive paint to all exposed surfaces of struts, hanger supports, covers, fascias, toe guards, dust covers and other ferrous metal.

O. Prehang traveling cables for a least 24 hours with ends suitably weighted to eliminate twisting.

P. Provide isolation pad between platen head and car structure.

Q. Set jack unit plumb in waterproof hole and bolt it to mounting channels in pit.

R Wrap cylinder wall with three coats of self-adhesive black polyvinyl chloride tape of 20 mil thick minimum. Cover weld beads with a wrap of tape prior to cylinder wrapping. Tape application, width and overlap shall be as recommended by manufacturer of tape applied.

S. Sound isolate pump units and controllers from building structure.

T. Mount operating fixtures with tamperproof screws. Coordinate fixture material and finishes with the Architect.

U. Adjust elevators to meet the performance requirements.

V. Provide and install motors, switches, controls, safety and maintenance and operating devices in strict accordance with the submitted wiring diagrams and applicable codes and regulations having jurisdiction

W. After installation touch up, in the field, surfaces of shop primed elements which have become scratched or damaged.

X. Lubricate operating parts of system as recommended by the manufacturer.

3.03 PROTECTION AND CLEANING

A. Adequately protect surfaces against accumulation of paint, mortar, mastic and disfiguration or discoloration and damage during shipment and installation.

B. Upon completion, remove protection and thoroughly clean work and have it free from discoloration, scratches, dents and other surface defects.

C. The finished installation shall be free of defects. Before final completion and acceptance of the building, repair and/or replace defective work, to the satisfaction of the Architect and the Owner at no additional cost.

END OF SECTION

SECTION 14205

ELEVATOR CABS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Work of this section shall be governed by the Contract Documents. Provide material, labor, equipment and services necessary to furnish and deliver all work of this Section as shown on the Drawings, as specified herein, and/or as required by job conditions.

B. The work shall include, but is not limited to, the following:

1. Custom cab enclosure including steel shell, finished wall panels, stainless steel front panels, transom, ceiling, lighting, stainless steel base, handrail with custom stainless steel supports.
2. Protective pads and concealed pad hooks.
3. Ventilation system.
4. Light fixtures
5. Engraving and embossing
6. Cut-outs, drilling, punching and reinforcing
7. Coordination of all work performed under Section 14200
8. Compliance with the general requirements.

1.02 RELATED WORK DESCRIBED ELSEWHERE

1. Section 14200: Installation of Elevator Cabs.
2. Section 16720: Furnishing of Life Safety System Speakers.
3. Section 16800: Security System and CCTV Coordination and Installation.

1.03 QUALITY ASSURANCE

A. Qualifications:

1. The work of this Section shall be performed by contractors regularly engaged in the business of manufacturing elevator cabs of the type and character required by these specifications.

B. Regulatory Agencies

1. Conform to:

a. City of New York - RS 18 Standard and local laws

b. New York City Building Code

c. ASME A17.1 and latest amendments and supplements

d. NFPA Codes

e. ADAAG

f. ASME A17.5/CSA - B44.1 - Elevator and Escalator Electrical Equipment

C. Reference Standards

1. ANSI A117.1 - Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.

2. ANSI/ASME A17.2 - Inspector's Manual for Elevators and Escalators.

3. ASTM A36 - Structural Steel

4. ASTM A366 - Steel, Sheet, Carbon, Col-Rolled, Commercial Quality

5. ANSI/AWS D1.1 - Structural Welding Code, Steel

6. ANSI/NFPA 70 - National Electrical Code

7. APA - American Plywood Association

8. ASTM A167 - Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip

9. ASTM A446 - Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality

10. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes

11. NEMA LD3 - High Pressure Decorative Laminates

1.04 EXTENDED WARRANTY

A. Warrant the work in accordance with the General Conditions and the following requirements. When a conflict occurs, the General Conditions shall prevail.

B. Warrant the Work specified herein for 10 years after date of acceptance by Owner against becoming unserviceable or developing an objectionable appearance resulting from either defective or non-conforming materials and workmanship.

C. Warrant that all assemblies, components and finishes specified comply with the Contract Documents, and all applicable codes, regulations and local restrictions and are compatible with each other, adjoining substrates, materials, Work, and other conditions of installations, and expected use.

D. Warrant against premature material failure due to improper product design, fabrication or installation.

E. Defects shall include, but not limited to, the following:

1. Noticeable deterioration of finish: discoloration, peeling, oxidation, non-uniformity of color and sheen, warp, twist and oil-canning.

2. Loose or missing parts.

3. Failure of any and all equipment and its components.

4. Missing or deteriorated sound insulation.

5. Vibrations, rattling and improper venting with associated noise.

6. Non-alignment of wall and ceiling panels.

1.05 SUBMITTALS AND MOCKUP:

A. Submittal Schedule: Within thirty days of award of Contract, the Contractor shall provide schedule of all submittals employing format and enumerating all Architectural drawings, samples and miscellaneous submittals by name, quantity, etc.

B. Samples:

Submit samples of the following listed items at the same time as the submission of the shop drawings for each cab type (five of each). Architect reserves right to require additional samples which will show fabrication techniques, workmanship of components and design of hardware and other exposed auxiliary items.

Item	Quantity	Size	Description
S1	3	12" x 12"	Wood veneer panel with typical corner detail (Refer to Section 06400, Architectural Woodwork.
S2	3	12" x 12"	Ceiling panel with wood framing
S3	1	Actual	Recessed down light fixture
S4	1	12" Long	Stainless steel handrail having stainless steel end caps and mounting hardware assembly
S5	1	3" x 6"	Stainless steel with No. 4 finish
S6	1	12" x 24"	Section of front return panel including intercom cutout, position indicator, handicapped markings, push buttons and engraving and graphics.
S7	1	12" x 12"	Protective Pad and Color Chart

C. Shop Drawings

1. Provide five (5) copies of shop drawings for each type of cab including scaled plans, elevations, reflected ceiling plans, and sections and large scale details noting dimensions, materials, finishes, gauges, clearances, joints, fasteners, and anchoring methods.

2. Locate and define hinged and removable panels, show the adjustability of the wall panels, access panels, emergency doors and ceiling panels, light fixtures, operating and signal panels and devices, locks, wiring, lamps and bulbs, power receptacles and finishes for car operating panels, fixed and hinged and all other required components and accessories. Provide details of handrails and their supporting devices, concealed ventilation slots, concealed pad hook arrangements, etc.

3. Shop drawings shall be fully coordinated with elevator contractor, fixture and devices.

D. Product Data

1. Submit for review to the Architect catalog cuts, data sheets and color brochures to indicate the performance, fabrication, materials, accessories, components and finishes proposed for the elevator cabs, (i.e. fan, lighting fixtures, etc.).

E. Maintenance Instructions

1. Provide 4 printed maintenance manuals including time schedules and instructions for the maintenance for each item specified. Forward one copy to the Architect for his record. Instruct and demonstrate the proper maintenance to the Owner's designated representative.

2. Provide recommendations for the car and maintenance of the specified metal and related cab finishes including manufacturer's recommend materials and products.

3. Refer to maintenance schedule for elevators specified in Sections 14200 for car items maintained by others including maintenance of the cab door mechanism, etc.

4. All required data including operation and maintenance manuals, catalog information, installation instruction manuals, charts, tables, etc., shall be submitted as follows:

   a. Document files in ASC II or Microsoft Word for Windows format on 3 1/2" HD discs or other approved high density discs.

   b. Charts, tables, etc. in Microsoft Excel format on 3 1/2" HD discs or other approved high density discs.

   c. Three (3) printed sets.

F. Make provisions to erect the first completed cab for PE1 and PE6 in plant for review and acceptance of the Architect.

1.06 PRODUCT HANDLING:

A. Protection:

Use all means to protect materials of this Section before, during and after fabrication.

B. Requirements:

In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Architect and at no additional cost to the Owner.

C. Delivery:

Materials shall be delivered to the site ready for use in the accepted manufacturer's original and unopened containers and packaging, bearing labels as to type of material and manufacturer's name. Delivered materials shall be identical to accepted samples. Provide heavy duty protection paper for non-coated items. Material shall be easily removed.

D. Storage:

Insure that the materials are stored under cover in a dry and clean location, off the ground. Delivered materials which are damaged or otherwise not suitable for installation shall be removed from the job site and replaced with acceptable materials.

PART 2 - PRODUCTS

2.01 PASSENGER ELEVATORS PE1 TO 3, HPE4, PE6 TO 11 AND HPE14

A. Car Shell and Canopy:

1. Shell - No. 14 gauge furniture steel reinforced and designed for finished paneling as specified. Finish shell panels with one coat rust inhibitive primer and two coats of enamel grey finish. Apply sound deadening material to the rear of the panels. Sound deadening material shall be of the rubberized type and shall be of either brush or spray-on consistency. Material shall be applied to a minimum of 1/8" thickness. If wood shell is used, provide 3/4" thick fire retardant particle boards with 26 gauge sheet steel outer shell along with an approved sound deadening material.

2. The car top shall be of no less than No. 12 gauge sheet steel suitably braced to meet the requirements of the Code. Exit panel details including heavy duty stainless steel piano hinge, contact switch, chains, stops, handles and locking arrangements of exit door shall be shown on the shop drawings.

3. Side emergency exits shall be provided for PE6 and 11. Side emergency exit shall be of inconspicuous flush design fitted with concealed hinges and a satisfactory flush lock. The lock shall provide three point locking of exit; at top, bottom and side.

B. Base:

1. Prepare shell for the installation of the finished based as specified under Design and Finishes.

2. Design base to provide a concealed vent slots to allow the proper amount of air to infiltrate the cab based on the CFM of the exhaust fan, without whistling or noticeable noise.

C. Front Return Panels, Entrance Post and Headers:

1. Provide fixed return panels with cutout for the installation of car operating panel provided under Specification, Section 14200.

2. Reinforce and construct the front return panels and transom sections the same as the wall panels.

3. Provide concealed full height stainless steel piano hinges of sufficient strength to support the panels, without sagging, in the open position. The locks shall secure the panel at a minimum of two points with linkage that shall be free of vibration and noise when in the locked position.

D. Cab Doors:

1. The doors shall be a minimum of 16 gauge hollow metal flush construction with reinforcement for power operation and insulation for sound deadening. The hatch side of the door panels shall be painted as specified for the shell with finish coats of black satin enamel.

2. The doors shall have no binder angles. All welds shall be continuous ground smooth and invisible.

3. All doors shall be drilled and reinforced to accept the safety edges, door operator hardware, etc.

E. Ceiling:

1. Hang ceiling from canopy with concealed fasteners. Use galvanized steel hangers adequately sized, positioned to sustain and withstand stresses without any vibration and rattling.

2. The top emergency exit shall be inconspicuously located.

F. Ventilation:

1. Ventilation system of the exhaust type shall be provided in each elevator.

2. The system shall include a blower driven by a direct connected motor and mounted on top of car with isolation to effectively prevent transmission of vibration to the car structure. The blower shall have not less than two operating speeds to provide 1 cab air change a minute at the lower speed and 1.5 air changes at the higher speed. The unit design and installation shall be such that the maximum noise level when operating at high speed shall not exceed 55dBA approximately three feet above the car floor. A three-position switch to control the blower shall be provided in the car station.

G. Handrails:

1. All handrail attachment hardware shall be concealed. Provide minimum 10 gauge plate behind shell where handrail is attached to car. Handrail shall be completely removable from inside the car.

2. The handrail and attachment shall be designed to support the weight of a person (250 lbs) sitting on it without any deflection or damage to the handrail, cab panel or cab shell.

H. Engraving:

1. The "No Smoking" sign, the capacity, firefighter instructions, special notices and identification of the elevator shall be directly engraved to the car operating panels. Submit location, layouts and samples of lettering and engraving for Architect's review. Applied plates unacceptable.

I. Accessory Equipment:

1. Each and every elevator cab shall be constructed to accommodate all necessary equipment furnished and/or furnished and installed under other sections of these specifications, including door operators, hangers, interlocks and CCTV. Examine the elevator specifications with respect to work required, to insure its completeness. Supplementary items of work necessary to complete each item, though not definitely specified, shall be included, and such supplementary items shall be noted in the Bid Proposal.

J. Flooring:

1. Recessed platform to accept finished flooring.

2. Provide stainless steel grating and studded rubber tile floor in each elevator as shown on the architectural drawings.

3. Studded rubber tile shall be Classic Tile Inc. 12" x 12" x 1/8" (or as approved equal by Architect). Reinforced with stainless steel studs.

K. Passenger elevators shall be provided with the following finishes as shown on the Architectural drawings.

1. Walls and Ceilings

a. Corrugated Stainless Steel Milgo-Bufkin #MB F748/125I 14 gauge, No. 4 finish or equally acceptable to the Architect.

b. Maple Veneer Panels:

(1) American White Maple

(2) Quarter cut; 6-8" widths; book matched.

(3) Straight vertical grain (without figuring) as white as possible in coloration and leaning towards the yellow side. Pink coloration is not acceptable.

(4) Minimal blemishes, sap wood, mineral streaks, etc. not acceptable.

(5) All flitches used for elevator cabs to match the above description.

(6) Finish to be A.W.I. (American Woodworking Institute) premium grade TR3 with a natural luster to simulate hand rubbed lacquer finish (glossy, cloudy finish not acceptable).

2. Ceiling Soffit

a. Stainless steel non-directional finish, 14 gauge.

b. Stainless steel frame, No. 4 finish.

c. 2 layers 1/4" laminated glass with diffusion interlayer.

3. Base

   a. 4" stainless steel No. 4 finish, 14 gauge

L. Service Elevators - SE12 and KE13

1. Wall Panels: Horizontal panel construction from floor to canopy with reinforcing as required to prevent sagging and oil canning. All panel bends shall have minimum radii. Bolt panels together with lock washers. Before bolting apply a sealant bead to joint.

   a. Lower Wall Panels: 4'-0" High, 1/8" thick diamond tread aluminum plate applied to 3/4" fire resistant plywood.

   b. Upper Wall Panels: 14 gauge stainless steel applied to 3/4" fire resistant plywood.

   c. Provide oval vent slots 4" above the floor as directed by the Architect.

2. Front Return Panel, Entrance Post and Transom: 14 gauge fixed type with required cutouts for standard car station. Reinforce entrance post with 10 gauge channel section. Transom shall be 14 gauge stainless steel and be constructed the same as the upper wall panels.

3. Suspended Ceiling: Stainless steel panels with reinforcement and hangers as required. Provide a hinged panel for emergency access. One panel to be perforated for exhaust air. Construction techniques for wall panels shall apply to ceiling panel construction. Provide a ceiling extension as shown on the drawing to facilitate service activities.

4. Lighting: Provide fully recessed down lights with fluorescent PL lamps in ceiling for no less than 40 foot candle illumination at eye level with the doors closed. The down lights shall have aluminum alzak reflectors with narrow trim.

5. Ventilation: Two speed (600/400 cfm), exhaust fan mounted securely to top ceiling and isolated to prevent vibration and noise within the car.

6. Cab Doors: Constructed of stainless steel with No. 4 finish, hollow metal flush construction. Door panels reinforced for power operation and insulated for sound deadening. Opening sizes as shown on drawings, standard 1" thick construction. Hatch side to be painted black, and car side faced with 14 gauge stainless steel with No. 4 finish.

7. Handrails: Two (2) 2" X 8" hardwood bumpers on all walls. Locate handrails 12" and 32" above the floor and mount with stainless steel countersunk bolts on 18" O.C. The handrails shall be demountable within the car.

8. Accessories: Stainless steel pad hooks and protective pads.

9. Finishes:

   a. Stainless Steel - No. 4 with long grain; grain direction as selected by the Architect.

   b. Furniture Steel - Two (2) coats of baked enamel paint as selected by the Architect.

PART 3 - EXECUTION

3.01 MATERIALS, WORKMANSHIP AND FINISHES:

A. All work shall conform to the Architect's details and, where not shown, construction shall conform to recognized shop practice for high quality work.

B. All work shall be executed by mechanics skilled in the trades and the Contractor shall not employ any careless or incompetent workmen on the work nor any mechanics outside the Unions have jurisdiction.

C. All materials shall be the best of their respective kinds. All panels shall be stainless steel unless otherwise indicated.

D. All ferrous metal which is not exposed to view, shall be finished with one (1) coat of rust inhibitive primer and finished painted with 2 coats of enamel prior to delivery.

E. Flatness of Stainless Steel Panels: Stainless steel panels, fascias, plate and fabricated or laminated sheet items shall read as flat and free of bow or "oil canning" or read thru of stiffeners when installed. Exposed metal faces shall be of such flatness as to conform to the following: For rectangular areas with lengths or width up to and/or including 24", the maximum overall variation on plane between high and low point shall not exceed 1/32" and the maximum overall variation on plane between high and low points within a panel shall not exceed 1/16".

F. Reinforcing: Install reinforcing as required for hardware and necessary for performance requirements, sag resistance and rigidity.

G. Corner Construction: Maximum exposed edge radius at corner bends shall be 1/16". There shall be no visible grain separation at the bend.

H. Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members.

1. Uniformity of Finish: Abutting etched stainless steel members shall not have an integral color or texture variation greater than half the range indicated in the sample pair submittal.

I. Fasteners: Conceal fasteners throughout. No exposed fasteners shall be used without specific approval of the Architect.

3.02 MATERIALS

A. Stainless Steel:

1. AISI Type 302 or Type 304, unless otherwise noted. Provide the specific type, alloy and finish as required to produce the work.

a. Stainless Steel Sheet and Plate: ASTM A167

b. Stainless Steel Bars and Shapes: ASTM A276

B. Steel Supports and Reinforcement:

1. ASTM A36 structural-quality steel.

3.03 FINISHES

A. Stainless Steel Finishes:

1. Remove scratches, abrasions, dents and other blemishes before applying finish. Apply the following finishes to the fabricated work, with texture and reflectivity as required to match the Architect's sample.

a. Satin Finish: No. 4 long grain finish.

3.04 INSPECTION

A. Study the Contract Documents with regard to the work as shown and required so as to insure its completeness.

B. Examine surface and conditions to which this work is to be attached or applied, and notify the Architect in writing, if conditions or surfaces are detrimental to the proper and expeditious installation of the work. Starting the work shall imply acceptance of the surfaces and conditions to perform the work as specified.

C. Verify, by measurements at the job site, dimensions affecting the work. Bring field dimensions which are at variance with those on the accepted shop drawings to the attention of the Architect. Obtain the decision regarding corrective measures before the start of fabrication of items affected.

D. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

3.05 INSTALLATION

A. Fabricate the elevator cabs using skilled workmen in strict accordance with the final accepted shop drawings and other submittals.

B. Comply with the code, applicable seismic requirements, manufacturers instructions and recommendations.

C. Coordinate work with the work of other trades for proper time and sequence to avoid construction delays and to insure right-of-way of system. Use lines and levels to ensure dimensional coordination of the work.

D. Provide and install fans, light fixtures, switches, controls, safety and maintenance and operating devices in strict accordance with the submitted wiring diagrams and applicable codes and regulations having jurisdiction.

E. After installation touch up, in the field, surfaces of shop primed elements which have become scratched or damaged.

F. Lubricate operating parts of system as recommended by the manufacturer.

3.06 PROTECTION AND CLEANING

A. Adequately protect surfaces against accumulation of paint, mortar, mastic and disfiguration or discoloration and damage during shipment and installation.

B. Upon completion, remove protection and thoroughly clean work and have it free from discoloration, scratches, dents and other surface defects.

C. The finished installation shall be free of defects. Before final completion and acceptance of the building, repair and/or replace defective work, to the satisfaction of the Architect and the Owner at no additional cost.

END OF SECTION

SECTION 14420

VERTICAL WHEELCHAIR LIFT

PART I - GENERAL

1.01 GENERAL REQUIREMENTS

A. Work of this Section shall be governed by the Contract Documents. Provide material, labor, equipment and services necessary to furnish and deliver all Work of this Section as shown on the Drawings, as specified herein, and/or as required by job conditions.

B. The Work shall include, but not limited to the following:

1. Four (4) wheelchair lifts.

2. Compliance with the General Requirements.

3. Refer to the "Form of Bid" for alternates for extended maintenance services and Warranty Services Agreement.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. Related Work Specification Elsewhere:

1.	Section 04223:	Interior concrete block for hoistway enclosures including grouting of entrances.
2.	Section 05100:	Structural supports
3.	Section 09250:	Gypsum board for Lobby walls and hoistways including cutting and patching.
4.	Section 14200:	Quality assurance, submittals, warranty, maintenance and inspection.
5.	Section 16100:	Suitable electrical feeders (110 volts, 15 AMP, power) through a lockable disconnect switch. Adequate lighting at lift area. Telephone communication wiring to a junction box in the machine area.

1.03 QUALITY ASSURANCE

A. Approved Wheelchair Lift Manufacturers:

1. Savaria, Inc.

2. Concord

3. or equal as approved by the Architect.

B. Qualifications:

1. The work of this Section shall be performed by contractors regularly engaged in the business of manufacturing vertical wheelchair lifts of the type and character required by these specifications.

2. Skilled tradesmen must be employees of the contractor and perform the work on a timely basis. Employees must be trained by the manufacturer and be supervised by the lift contractor.

3. Contractor must have successfully performed at least two similar installations of exact equipment as proposed for this contract.

1.04 REGULATORY AGENCIES

A. Conform to:

1. New York City Building Code and Reference Standard RS-18.

2. ASME A17.1, Section 2000, and latest amendments and supplements

3. NFPA Codes

4. ADAAG

5. NFPA, fire doors - holstway entrances

6. ASME A17.5/CSA -B44.1 - Elevator and Escalator Electrical Equipment

B. All clearances, workmanship, construction, design and materials shall be in accordance with the requirements of the latest ASME A17.1 Code and all codes or rules of the City, State, other authorities having legal jurisdiction, and the codes hereinafter named.

C. The ASME Code shall take preference except where other codes having jurisdiction include more stringent rules or conflict with the ASME Code.

1.05 REFERENCE STANDARDS

A. AISC - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

B. ASTM A36 - Structural Steel

C. ASTM A366 - Steel, Sheet, Carbon, Col-Rolled, Commercial Quality

D. ANSI/AWS D1.1 - Structural Welding Code, Steel

E. ANSI/NFPA 70 - National Electrical Code

F. ANSI/NFPA 80 - Fire Doors and Windows

G. ANSI/UL 10B - Fire Tests of Door Assemblies

H. APA - American Plywood Association

I. ASTM A139 - Electric-Fusion (ARC) Welded Steel Pipe (NPS 4 Inch and Over)

J. ASTM A167 - Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip

K. ASTM A446 - Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality

L. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes

1.06 SUBMITTALS

A. Submit the following:

1. Samples (five of each)

Item No.	Quantity	Size	Description
S1	3	12" x 12"	All exposed finishes to Architect
S2	1	Actual	All fixtures to Architect

2. Shop Drawings

a. Location of Equipment

b. Service Connections

1.11 MAINTENANCE

A. Maintenance Alternates 1 and 2: See Warranty Service Agreement for maintenance and extended warranty requirements.

PART 2 - PRODUCTS

2.01 GENERAL DESCRIPTION

A. Wheelchair Lift

1.	Quantity -	Four (4) designated as HL1, HL2, HL3, and HL4
2.	Type -	Wheelchair Lift
3.	Capacity (lbs.) -	750
4.	Speed (fpm) -	15
5.	Travel in feet -	See Drawings
6.	Number of Landings -	Two (2)
7.	Number of Openings -	Two (2)
8.	Front -	One (1)
9.	Rear -	One (1) except HL4
10.	Side/90^{o}F -	One (1) HL4 Only
11.	Operation -	Constant Pressure Call-Send with anti-creep feature
12.	Control -	AC
13.	Platform size -	36" wide x 54" deep nominal (except HL3 which is 48" deep)
14.	Buffers -	None
15.	Runway enclosures -	Provide stainless steel with tempered glass in hoistways, if none exists
16.	Runway enclosure doors -	3'-0" wide tempered glass with stainless steel kick plate
17.	Door operation -	Manual

18. Fixture and signals - As further specified

19. Drive - Hydraulic

20. Machine Housing and Location - Adjacent to platform

21. Power Supply - 110 Volts, single phase, 15 AMPS

22. Emergency Power - Battery power "down" direction

2.02 GUIDE RAILS, INSERTS AND BRACKETS

A. The guide rails shall be supported from steel angles as shown on the drawings. The angles shall be provided by this contractor, extend full height of the shaft and secured to the existing concrete slab as approved by the structural engineer.

B. All equipment secured to the building structure shall be isolation mounted in a manner to prevent transmission of vibration to the structure.

C. Guide rails shall form part of the structural integrity of the unit and be integral to the mast enclosure, ensuring stability and minimum platform deflection when fully loaded.

2.03 NORMAL AND FINAL TERMINAL STOPPING DEVICES

A. Provide Normal terminal stopping devices to stop the lift at floor level automatically from any speed obtained under normal operation.

B. Provide final terminal stopping devices to stop the lift automatically from the speed specified within the top clearance by removing power to the lift in the event of the normal stopping device failure.

2.04 ENTRANCE FRAMES, DOORS AND RUNWAY ENCLOSURE

A. Provide doors, frames and runway enclosure in compliance with code requirements for clearances and operation. Provide tempered glass panels with stainless steel kick plates. Include stainless steel; hinges, closers, door pulls, locking hardware and interlocks for a complete installation. All hardware shall be low profile and inconspicuous.

B. Refer to Architectural drawings for hoistway enclosures. Provide tempered glass panels with stainless steel kickplates for side wall enclosures where a hoistway is not provided.

2.05 INTERLOCKS

A. Equip each lift enclosure door with a positive interlock (mechanical lock with electric contact) which shall prevent the operation of the lift unless all enclosure doors are closed and maintained closed when elevator is away from the landing. The interlocks

shall also prevent the opening of a hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped at that level.

B. The locking device may only permit the door to be opened if the platform is within 2" of the landing.

C. The exposed portion of the interlock shall be satin stainless steel and installed to minimize appearance.

2.06 STOP SWITCHES

A. Provide a readily accessible stop button for stopping and maintaining the lift out of service in the car operating panel.

2.07 FASCIA AND TRIM

A. Provide 14 gauge stainless steel fascia and trim as required in the runway to conform to all Codes required clearances.

2.08 PUMPING UNIT AND CONTROLS

A. The pumping unit and control shall be enclosed in the tower. The controller and pump unit shall be pre-wired and tested before shipment. Control circuitry shall be mounted as an integral unit. The pump unit will include the following features:

1. Smooth stops at each landing shall be an inherent feature.
2. Adjustable pressure relief valve.
3. Manually operating DOWN valve to lower elevator in an emergency. This valve shall be activated from outside the hoistway through a keyed box.
4. Pressure gauge with Quick Connect feature.
5. Pressure gauge isolating valve manually operated.
6. Gate valve to isolate cylinder from pump unit.
7. Means to set maximum DOWN direction speed regardless of load.
8. Electrical solenoid for DOWN direction control.
9. Emergency power lowering by battery power.

B. Data plate shall be provided by the manufacturer on the unit in accordance with Rule 2000.7c of ASME A17.1.

2.09 CYLINDER AND PLUNGER

A. The cylinder shall be constructed of steel pipe of a sufficient thickness and suitable safety margin. The top of the cylinder shall be equipped with a cylinder head with an internal guide ring and self-adjusting packing.

B. The plunger shall be constructed of a steel shaft of a proper diameter machined true and smooth. The plunger shall be provided with a stop electrically welded to the bottom to prevent the plunger from leaving the cylinder.

2.10 LEVELING DEVICE

A. The lift shall be provided with an anti-creep device that will maintain the carriage level within 1/2" (13 mm) of the top landing.

B. All limit switches and leveling device switches shall be located in a position to be inaccessible to unauthorized persons. They shall be located behind the mast wall and be accessible through removable panels.

2.11 PLATFORM SENSOR PLATE

A. Provide under platform safety plate to stop lift while traveling in the DOWN direction upon contact with an obstruction.

2.12 CABLE OR ROLLER CHAINS

A. Minimum breaking strength 6,100 lbs. each.

2.13 SAFETY DEVICE

A. A "slack/broken cable" safety device shall be provided which will stop and sustain the lift and its rated load, if either of the hoisting cables becomes slack or breaks. The safety device shall be resettable by the operation of the lift in the upward direction. A switch shall be mounted in such a position to sense the operation of the safety device, and will open the safety circuit to the controller to prevent operation of the lift in either direction.

2.14 GUIDE YOKE

A. The 1:2 guide yoke/sheave arrangement shall be supplied with a sheave/sprockets, guide shoes, roller bearings and adjustable cable guards. The sheave shall be finished with rounded grooves to fit the cables.

2.15 CAR SLING

A. Car sling shall be fabricated from steel members with adequate bracing to support the platform and car.

B. Guide shoes shall be mounted on the top and bottom of the car sling to engage the guide rails.

C. The car sling arms shall be detachable.

2.16 CAR OPERATION

A. Car operating panel shall consist of constant pressure buttons or rocker switches, an emergency stop/alarm button, an on/off key switch and emergency light mounted on a removable stainless steel panel (Type 304 #4 stainless steel finish).

B. Emergency Operation - The car shall be equipped with a battery operated light fixture, emergency battery lowering device and alarm in case of normal building supply failure. The battery shall be the rechargeable type with an automatic recharging system.

2.17 WIRING

A. Provide all wiring and conduit required for the operation of the lifts. All wiring shall be hidden.

B. Wiring, conduit, fittings, junction and control boxes, switches, electrical devices, etc. shall be in accordance with Code.

C. Run all wiring in liquid tight metal and flexible conduit as approved by the governing authorities.

2.18 FIXTURES AND SIGNALS

A. Platform Operating Panel

1. Provide a lift operating panel on the platform enclosure.

2. The panel shall have stainless steel faceplate and include the following devices:

a. An "on-off" key switch for activating the control switch.

b. "Up" and "Down" constant pressure control switches. Note: The switches shall be designed so that both the "up" and "down" circuit cannot be operated at the same time.

c. "Alarm" button with light jewel.

d. "Emergency Stop" button.

e. Intercommunication device including vandal resistant speaker grille, speaker, microphone, push to call button and visual indicator.

3. The rated load capacity shall be provided on the car panel. Lettering shall be at least 1/4" high engraved into the faceplate and filled with black epoxy.

B. Hall Call Stations

1. Provide a call station at each landing. The station shall include the following:

   a. An "on" -"off" key switch to activate the control switch.

   b. "Up" and "Down" constant pressure control switches. Note: The switches shall be designed so that both the "up" and "down" circuit cannot be operated at the same time.

   c. Flush mount the fixtures in the front shaft wall adjacent to the entrance frame and provide fixtures with satin stainless steel faceplates.

C. An alarm bell shall be provided and mounted in the vicinity of the lift in an area as chosen by the Architect and connected to the alarm button mounted in the platform operating panel. A light jewel shall be provided which shall illuminate when activated.

D. Auto Dial Telephone

1. Provide an automatic dialing, hands-free telephone in the car station behind the faceplate. The system shall be in compliance with ADA requirements for visual audible communications. Locate speaker and microphone behind a vandal resistant speaker grille.

2. The telephone shall be turned on by pressing the push-to-call button, emergency alarm or stop switch in the car panels. It shall automatically dial a pre-programmed number to alert the security personnel that there is a problem in the elevator.

3. Provide programmable time clock switch mechanism which shall allow the system to dial a second programmed number for after hours and weekends.

4. The system shall have a ring back feature to allow calls to be placed to the elevator. It shall answer the incoming call automatically and shut off after an adjustable programmed time.

5. Provide an audible and visual signal to indicate that a communication link has been established.

6. NiCad batteries shall insure operation under all conditions.

7. Install the instrument in the car panel and wiring within the hoistway, terminating the wiring in the machine room. A suitable and identified junction box in the machine room shall be installed.

8. All connections from the junction box to the security room's main telephone system shall be done by others. All electrical shall conform to Division 16 requirements.

2.19 CAR ENCLOSURE

A. The enclosure shall be tempered glass similar to V 1504-LUX by Savaria or equal as approved by the Architect. The enclosure panel shall be 42" above the upper landing.

B. No platform gate required, to allow for ease of operation.

C. Upper gate shall be 42" high x 34" clear open width, tempered glass and shall be equipped with interlock, spring hinges and stainless steel kick plate on both sides. Lower door shall be even with the height of the upper gate x 34" clear open width, and shall be equipped with interlock, hydraulic closer and kick plate on both sides. The inside kick plates shall be made of stainless steel. Gates shall swing as shown on drawings.

D. Lift shall have manufacturer's standard non-skid flooring.

E. The upper gate shall have an adjustable fascia with steel frame and metal insert that runs down to the pit.

F. Doors and gates shall be flush mounted inside the hoistway as to avoid pinch points and shear hazards.

G. Handrail: A single stainless steel handrail with both ends returned to the wall shall be located on the control wall of the carriage.

2.20 EQUIPMENT FABRICATION

A. The unit including fascia, gates, platform, etc. shall be fabricated from 16 gauge sheet steel in 1/1/2" x 1/2" x 0.1" steel tube frame.

B. All fasteners, screws, hardware, etc. shall be stainless steel.

C. The platform shall be minimum 10 gauge steel with non slip finish and reinforced as required.

2.21 FULL PROTECTIVE MAINTENANCE SERVICE

A. Submit two alternate prices to extend the full maintenance service beyond the installation period. Alternate No. 1 shall be submitted for the 1st year commencing after final acceptance of all units and Alternate No. 2 for the 2nd thru 5th years, thereafter, in accordance with the warranty service agreement.

PART 3 - EXECUTION

3.01 INSPECTION

A. Study the Contract Documents with regard to the work as shown and required so as to insure its completeness.

B. Examine surface and conditions to which this work is to be attached or applied, and notify the Architect in writing, if conditions or surfaces are detrimental to the proper and expeditious installation of the work. Starting the work shall imply acceptance of the surfaces and conditions to perform the work as specified.

C. Verify, by measurements at the job site, dimensions affecting the work. Bring field dimensions which are at variance with those on the accepted shop drawings to the attention of the Architect. Obtain the decision regarding corrective measures before the start of fabrication of items affected.

D. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

3.02 INSTALLATION

A. Install the wheelchair lift using skilled workmen in strict accordance with the final accepted shop drawings and other submittal.

B. Comply with the code, manufacturer's instructions and recommendations.

C. Coordinate work with the work of other trades for proper time and sequence to avoid construction delays and to insure right-of-way of system. Use lines and levels to ensure dimensional coordination of the work.

D. Accurately and rigidly secure supporting elements within the runway to the encountered construction within the tolerance established.

E. Provide and install motors, switches, controls, safety and maintenance and operating devices in strict accordance with the submitted wiring diagrams and applicable codes and regulations having jurisdiction.

F. After installation touch up, in the field, surfaces of shop primed elements which have become scratched or damaged.

G. Lubricate operating parts of system as recommended by the manufacturer.

3.03 PROTECTION AND CLEANING

A. Adequately protect surfaces against accumulation of paint, mortar, mastic and disfiguration or discoloration and damage during shipment and installation.

B. Upon completion, remove protection and thoroughly clean work and have it free from discoloration, scratches, dents and other surface defects.

C. The finished installation shall be free of defects. Before final completion and acceptance of the building, repair and/or replace defective work, to the satisfaction of the Architect and the Owner at no additional cost.

END OF SECTION

Baruch Academic Complex
Baruch College - Site B
New York, NY
Page 14420 - 14

SECTION 14700

ESCALATORS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Work of this Section shall be governed by the Contract Documents. Provide material, labor, equipment and services necessary to furnish and deliver all Work of this Section as shown on the Drawings, as specified herein, and/or as required by job conditions.

B. The Work shall include, but not limited to the following:

1. Ten (10) escalators with 40" wide steps
2. Compliance with the General Requirements
3. Refer to the "Form of Bid" for alternates for extended maintenance services and Warranty Services Agreement.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A.	Section 03300:	Wellway, pits, supports for truss
B.	Section 09250:	Covering for the exterior of the escalator from the edge of the deck including covering for the truss and soffit. Materials shall be fire resistant and shall not weigh more than ten (10) pounds per square foot (unless further specified)
C.	Section 14200:	Elevators
D.	Division 16:	Installation of power feeders to machine space
E.	Division 16:	Lights and receptacle in machine space and pits:
F.	Division 16:	Signal wiring from smoke detectors to a junction box in machine space

1.03 QUALITY ASSURANCE

A. The approved escalator manufacturers are:

1. Schindler Elevator Company
2. Otis Elevator Company

3. Montgomery KONE

4. Thyssen

5. Equal as approved by the Architect

B. Contractor must have successfully installed at least two similar installations with exact equipment as proposed for this contract.

1.04 REGULATORY AGENCIES

A. All clearances, workmanship, construction, design and materials shall be in accordance with the requirements of the latest ASME A17.1 Code and all codes or rules of the City, State, other authorities having legal jurisdiction, and the codes hereinafter named.

B. The ASME Code shall take preference except where other codes having jurisdiction include more stringent rules or conflict with the ASME Code.

1.05 REFERENCE STANDARDS

A. ASME A17.1, and latest amendments and supplements.

B. Building Code of the City of New York and Reference Standard RS-18

C. NFPA Codes

E. ASME A17.5/CSA-B44.1 - Elevator and Escalator Electrical Equipment

1.06 SUBMITTALS

A. Submit the following:

1. Samples (five of each)

Item No.	Quantity	Size	Description
S1	3	4" x 6"	Exposed finishes as requested by Architect
S2	1	Actual	Each fixture as requested by the Architect

2. Shop Drawings

a. Escalators plan and sections including:

(1) Support Locations

(2) Balustrade Details

(3) Floor Pan Details

(4) Control Devices

3. Calculations

a. Support Loads

b. Heat emissions in machine room

c. Electrical loads including starting, accelerating and running currents. Include all auxiliary loads.

1.07 PERMITS, TESTING AND INSPECTIONS

A. File necessary drawings for approval of all authorities having jurisdiction, obtain and pay all required fees for permits and inspections, etc., which may be required for the execution of his work. Copies of all permits shall be forwarded to the Owner through the Construction Manager.

B. Obtain, arrange and/or pay for any necessary permits, tests and inspections.

C. Furnish all test instruments and materials required at the time of final inspection. Perform inspection and testing of escalators in accordance with the applicable codes.

1.08 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Delivery, Storage and Handling:

1. Deliver materials to the site ready for use in the accepted manufacturer's original and unopened containers and packaging, bearing labels as to type of material, brand name and manufacturer's name. Delivered materials shall be identical to accepted samples.

2. Store materials under cover in a dry and clean location, off the ground. Remove delivered materials which are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

1.09 CONTRACT CLOSE-OUT

A. Guarantee and Warranties:

1. Warrant the equipment installed under these specifications against defects in material and workmanship and correct any defects not due to ordinary wear and tear or improper use or car which may develop within one year from the date each unit is completed and placed in permanent operation and accepted by the Owner. This section shall apply separately to each unit as completed and placed in operation.

2. This warrantee shall be written and issued at the completion of each unit prior to final payment.

1.10 OPERATING AND MAINTENANCE DATA

A. Furnish neatly bound instructions giving the method of control and operation, together with data on all switches, relays and other devices as will be needed for serving and for ordering replacements.

B. Furnish bound instructions and recommendations for maintenance, with special reference to lubrication and lubricants.

C. Furnish sets of complete and legible "as-built" field wiring diagrams, layouts and straight line diagrams showing the electrical connections, functions, and sequence of operation of all apparatus connected with the system together with photographs or cuts of controller repairs parts with part numbers listed.

D. Wiring Diagrams shall be accurately and completely transferred to AutoCad files by the Contractor and submitted as follows:

1. Drawing files in AutoCad Release 12 Format for DOS on 3-1/2" HD discs or other approved high density discs.

2. Three (3) sets of blueprints.

3. Two (2) sets of 3 mil Mylar reproducibles.

E. All required data including operation and maintenance manuals, catalog information, installation instruction manuals, charts, tables, etc., shall be submitted as follows:

1. Document files in ASC II or Microsoft Word for Windows format on 3-1/2" HD discs or other approved high density discs.

2. Charts, tables, etc., in Microsoft Excel format on 3-1/2" HD discs or other approved high density discs.

3. Three (3) printed sets.

1.11 MAINTENANCE

A. Maintenance Alternates 1 and 2: See Warranty Service Agreement for maintenance and extended warranty requirements.

PART 2 - PRODUCTS

2.01 GENERAL DESCRIPTION

A. Escalators - ESC 1 to ESC10

1.	Quantity -	Ten (10)
2.	Incline -	30 degrees
3.	Step width -	40"
4.	Vertical Rise -	ESC 1 : 16'-2" ESC 2 : 14'-4" ESC 3 & 4 : 15'-6" ESC 5 & 6 : 18'-0" ESC 7 & 8 : 14'-0" ESC 9 & 10 : 14'-0"
5.	Floors served -	ESC 1 : B2 and B1 ESC 2 : B1 and G ESC 3 & 4 : G and 2 ESC 5 & 6 : 2 and 3 ESC 7 & 8 : 3 and 4 ESC 9 &10 : 4 and 5
6.	Speed -	100 fpm
7.	Flat steps (top/bottom) -	Two (2) at each end
8.	Inside balustrade material -	ESC 3 & 4: Solid stainless steel with No. 4 finish All other escalators : Clear tempered safety glass
9.	Balustrade joints -	Perpendicular to escalator incline
10.	Deckboard Material -	Stainless steel No. 4 finish
11.	Skirt Material -	Stainless steel with Teflon coating
12.	Handrail color -	Black
13.	Remote monitoring -	Remote monitor system in FCC (Rm 1-181)
14.	Power Supply -	480-3-60

2.02 EQUIPMENT AND MATERIALS

A. General

1. Escalators shall be the cleat step reversible type, self-contained units, capable of operating under full load conditions, in either direction for ascending or descending passenger service, at an incline of thirty degrees from the horizontal and be complete with driving machine, safety devices, balustrading, etc., as herein specified. Design escalator for quiet and smooth operation at the specified speed.

2. Provide necessary sound isolation so that the noise level does not exceed 55 dBa measured 3'-0" above the combplate.

3. Site verify vertical rise of each escalator prior to fabrication.

4. Coordinate the delivery, storage and installation requirements of the escalators with the Construction Manager. Sectionalize the escalators as required and stage their installation so that the surrounding structure, floor and wall construction are not disturbed.

B. Wiring and Disconnect

1. Provide all necessary wiring for the proper operation of the equipment, beginning at the power outlets. All wiring shall meet the local Electrical Code requirements.

2. Except for low voltage wiring, run all conductors in steel conduit or electrical metallic tubing within the truss.

3. Adequately support and fasten conduit, flexible metal conduit and wiring so that they do not come in contact with the escalator components in motion.

4. Provide a fused disconnect or circuit breaker switch of the proper amperage next to the controller.

5. All wiring must test free from short circuit or grounds and the insulation resistance between conductors, and conductors and ground shall be at least one megohm.

6. Mark all connections and wires by numbered adhesive waterproof labels.

C. Truss

1. The truss shall be designed and constructed of structural steel shapes to safely carry the entire load of the escalator including all parts, together with the full capacity load, including the weight of the exterior balustrading and truss covering of not more than 10.0 pound/square feet.

2. Design truss for a step loading of 300 lbs. and a truss deflection of 1/750 of support to support distance.

3. Design the top of the truss to carry the drive machine and controller. The entire truss shall have a factor of safety in accordance with the requirements of the code.

4. Design and reinforce truss for the specified rises without an intermediate support.

5. Provide galvanized, full width and length oil drip pan.

6. Provide stainless steel sheets on the underside of the trusses for escalators ESC1 and ESC2 as shown on the architectural drawings. All other exterior covering shall be provided under other sections of the contract.

D. Tracks

1. The tracks upon which the step rollers travel shall be constructed of drawn steel and shall be installed and supported to insure correct alignment and smooth operation of the running gear under all conditions in both directions. All tracks shall have a smooth finish track surface and shall have means provided to positively insure the forming of the steps before the 30 degree run and flattening of the steps to the comb plates.

2. The tracks shall be set up to provide for two flat steps at the bottom and top prior to the 30 degree transition.

E. Step Chains

1. One step chain shall be located on either side of the steps and shall be of the endless roller type. The chains shall be made of high grade steel links with hardened pins and rollers designed to accurately and quietly engage the drive sprockets to insure a smooth, quiet operation.

2. Provision shall be made to prevent sagging or buckling of the chains, to prevent the steps from coming in contact with each other, and to maintain substantially constant distances between step axles of all exposed steps. Provide a tensioning device to maintain the proper tension on the chains.

3. These chains shall have a factor of safety of at least 5.

F. Driving Machine and Motor

1. The driving machine shall be of the worm gear type, especially designed for escalator service and provided with accurately machined gears driven by a moderate speed A.C. motor having Wye Delta start. The driving machine shall be of sufficient size and capacity to operate without exceeding the rate of horsepower of the driving motor.

2. The motor rating shall be based on a temperature rise not exceeding 50 degrees C after continuous run of one hour starting at room temperature. The motor speed shall not exceed 1800 rpm and shall conform to the standard of the AIEE.

G. Steps

1. The step frame shall be integral with the treads and shall be made of die cast aluminum suitably reinforced and braced to carry a maximum load per step under eccentric loading condition without distortion. The width, depth and clearance of the steps shall be as outlined in the Code.

2. Provide ball or roller type step rollers with a minimum diameter of 2 3/4 inches. The rollers shall be the dust-proof, self-aligning and self-lubricating type. Mount rollers for smooth quiet operation and for easy removal.

3. The design of the steps and their attachments shall permit the steps to be removed without disturbing the balustrades or dismantling any part of the chains.

H. Controllers

1. The controller shall be of the electromagnetic type designed to connect the escalator motor to the electric service, protect the motor against overload, include overload protection, and provide proper control of the moving stairway. Should a power failure occur, or any safety device operate, the controller shall automatically cut off power to the motor and apply the service brake to bring the escalator to a quick, smooth, safe stop within one (1) pallet length.

2. Mount all electrical equipment on insulated panels with adequate spacing and protect them to prevent personnel from contacting equipment during normal operation.

3. All panel wiring shall be neatly formed and tied. The terminals are to have indelible means of identification to facilitate testing and repair. The identification markings shall be coordinated with identical markings used on the wiring diagrams.

4. Locate the controller in the machine room space. The controller shall be removable with flexible connecting cables and a device to stand controller firmly upright when removed from machine room space.

I. Step Treads

1. The step treads and step frame shall be integral and shall be of die cast aluminum, cleat type, of a design to afford the best possible foothold. The tread surface of the step shall be slotted in the direction parallel to the travel of the steps. Each slot shall be not more than 1/4" wide and not less than 3/8" deep. The distance from the center line to center line of adjacent slots shall be not less than 3/8". The maximum clearance between step treads on the horizontal run shall be 1/8".

2. The clearance on either side of the steps between the steps and adjacent skirt panel shall be not more than 1/8" and the sum of the clearances on both sides shall be not more than 5/16". This requirement applies even with top and bottom skirt safety switches.

3. The step tread sides and rear shall have manufacturer's standard plastic inserts in a color selected by the Architect.

4. The vertical curved step riser on each step shall be of die cast aluminum, with the face having grooves that mesh with the treads of the adjacent step during step formation to prevent objects from becoming engaged between the riser and step in the transition of a fully formed step to the flattened surface entering the comb plate at the top or bottom of the escalator.

J. Comb Plates

1. The comb plates shall have a skid-reducing surface except for the comb areas. The comb shall have closely spaced teeth arranged so that the step treads shall pass between them with minimum clearance. The comb teeth shall be made in sections so that any damaged or worn sections can be readily replaced without disturbing the main comb plate. The comb teeth shall be formed to correspond to the form of treads to obtain uniform side clearances. The comb plates shall be adjustable both horizontally and vertically. Comb plates shall be cast aluminum units arranged to correspond to step treads.

K. Handrail Guides and Handrails

1. The handrail guides shall be of steel or other alloy of proper rigidity and shall be shaped to allow easy movement of the handrail. Shape guides to prevent the handrail from being easily thrown off.

2. The handrail shall be constructed of laminated canvas and rubber, properly vulcanized. The splice shall be vulcanized to produce a smooth continuous surface. The handrail shall be properly shaped to fit the guide track of the handrail guide.

3. The handrails shall be synchronized to move in the same direction and at the same speed on the steps. The handrails shall extend at least 24" beyond the comb plate teeth at the same height before starting its turn. Hand or finger guards shall be provided at the point where the handrail enters the balustrades.

L. Floor Pans

1. Provide full width landing and floor pans to cover the entire area of the landings within the outline of the truss and shall be supported by the truss. Furnish access in the form of counterbalanced manholes or removable covers at the upper end over the machinery spaces. If an access is required at the lower end by local codes, local inspectors or by the escalator manufacturer, it shall be the escalator manufacturer's responsibility to supply such access similar in design to the access at the upper end.

2. Upper and lower landing floor pans shall be stainless steel with etched grid and reinforced not to deflect more than 1/4" under a point load of 300 pounds.

M. Balustrading

1. Provide the skirt panels, inside and outside deck boards and moldings, to match the finishes as hereinafter specified. The balustrading shall be of the streamline type, with extended newels and upper and lower landings.

2. The skirt panels shall be 1/8" thick stainless steel with a 1/16" thick Teflon coating. The skirt panels shall be rigidly reinforced and arranged for positive and permanent adjustment.

3. The inner and outer deck boards shall be stainless steel with a No. 4 finish. The design shall be flat.

4. ESC 3 and ESC4 shall have solid stainless steel balustrades. The inside paneling of all other escalators shall be fully tempered clear glass, manufacturer's recommended thickness with perpendicular butt joints to escalator incline without separating mullions.

N. Starting Switches

1. Each escalator shall be provided with a start switch located in a surface or flush mounted fixture as directed by Code at the upper and lower landings. The switch shall be of the spring return key type, and monetary movement in either direction shall determine whether the escalator runs up or down.

2. The switch shall be interconnected through the controller so that the escalator is brought to a complete stop before the direction of travel can be changed.

O. Emergency Stop Button

1. Provide a red stop button at the top and bottom landing where directed by Code. Enclose the button with a lift-up 1/4" thick plastic cover. When the cover is lifted an audible alarm shall sound with an intensity of 80 dBA minimum at the button location. Cover makings shall conform to the requirements of the Code.

2. House the stop button in a stainless steel box with a self-resetting cover as approved by the Architect.

3. Arrange the controls to automatically shut down the escalators upon receiving alarm signal from smoke detectors and/or water flow switches.

P. Broken Step Chain Safety Devices

1. Provide broken step chain safety device with electric contacts which shall open and cause the service brake to be applied, should either or both the step chains break or should the tension on the step chains drop below or exceed a

predetermined value. Opening of these contacts shall remove power from the driving machine and set the brake bringing the escalator to a smooth and safe stop within one (1) tread length.

Q. Broken Drive Chain Emergency Brake

1. If a machine to step sprocket drive chain is used, a mechanically applied emergency brake shall be provided on the top sprocket shaft. This emergency brake shall be automatically engaged and this shall safely stop a loading escalator if the drive chain breaks.

R. Non-Reversing Device

1. Should the escalator attempt to reverse while operating in the ascending or descending direction, the non-reversing device shall remove power from the driving machine and apply the service brake to bring the escalator to a smooth and safe stop within one (1) tread length.

S. Overspeed Governor

1. Provide an overspeed governor which will remove power from the driving machine and apply the brake to stop the escalator, should it obtain a speed of 120 percent of its rated speed.

T. Step Safety Switches

1. Provide safety switches on each side of the escalator. If an obstruction occurs, between the edge of the steps and the skirt panel, actuation of any one of the switches shall remove the power from the driving machine and apply the service brake. The switches shall be effective for either direction of travel and shall not have their efficiency impaired by dirt or dust. Actuation of the switch closest to the comb plate shall cause the escalator to stop before the obstruction reaches the comb plate.

U. Slack Handrail Safety

1. Provide a safety device with an electrical switch to cut off the power to the driving machine and bring the escalator to a smooth and safe stop should either handrail break or should the tension change from a predetermined value.

V. Comb Plate Safety Switch

1. Provide a dual acting comb plate safety switch on both sides of the upper and lower landing.

2. The switch shall actuate if the comb plate is lifted vertically more than 1/16". This switch shall also actuate if the step engages the comb plate more than 1/16" out of alignment in the horizontal direction.

W. Tandem Operation

1. Provide tandem operation for the escalators as prescribed by the Code.

X. Missing Step Device

1. Provide a device to detect a missing step to bring the escalator to a stop before the missing ste section becomes exposed.

Y. Lubrication

1. Provide each moving part of the escalator installation with a self-oiling bearing with provisions for greasing or with grease-gun connections suited to a pressure gun for distributing heavy oil or light grease. All grease gun connections shall be of the same type to fit the gun. All points of lubrication shall be readily accessible.

Z. Service Brake

1. Mount an electrically released and spring applied service brake of sufficient capacity to stop and hold a fully loaded escalator on the main drive shaft or on the escalator machine. This brake shall apply every time the power is removed from the escalator motor by operation of any of the safety devices.

AA. Demarcation Lights

1. A green demarcation light shall be located below the steps at the entrance to the escalator so that the break in the steps, as they start to form, is clearly visible.

BB. Caution Signs

1. Post caution signs at top and bottom ends of the escalators as prescribed by the Code.

CC. Remote Monitoring

1. Provide a microprocessor based escalator remote monitoring system in Rm. 1-181, near the FCC. The system shall be the manufacturer's standard and shall be incorporated into the elevator control and information management system provided under Section 14200.

2. Remote monitoring service system shall provide a visual display of the following data for each escalator.

   a. Status of the escalator.

   b. Direction of travel.

c. Events, faults and malfunctions that have occurred within the escalator for the last 30 days of operation.

d. Total service hours.

2.03 FULL PROTECTIVE MAINTENANCE SERVICE

A. Submit two alternate prices to extend the full maintenance service beyond the installation period for all the elevators included in the Specifications. Alternate No. 1 shall be submitted for the 1st year commencing after final acceptance of all units and Alternate No. 2 for the 2nd thru 5th years, thereafter, in accordance with the warranty service agreement.

PART 3 - EXECUTION

3.01 PREPARATION

A. Examine work of other trades on which the work of this Section depends. Report defects to Architect/Engineer in writing which may affect the work of this trade or equipment operation.

B. Insure the preparatory work, provided under other Section, has been properly completed to receive the escalator work.

3.02 INSTALLATION

A. Perform work with competent mechanics skilled in this work and under the direct control and supervision of the escalator manufacturer's experienced foremen.

B. Install machinery, guides, controls and all equipment and accessories in accordance with manufacturer's instructions, applicable codes, and standards to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.

3.03 CLEANING

A. Prior to final acceptance, remove protection from finished surfaces and clean and polish surfaces with due regard to type of material.

B. At completion of this Section, remove tools, equipment and surplus materials from site.

3.04 ADJUSTMENT AND BALANCE

A. Make necessary adjustment of equipment to insure escalator operates smoothly and accurately.

END OF SECTION

Baruch Academic Complex
Baruch College - Site B
New York, NY
Page 14700 - 14